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CSCI 172.02C: Introduction to Computer Modeling

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MISSOULA COLLEGE

UNIVERSITY OF MONTANA

Department of Applied Computing and Electronics Department

Fall 2013

CSCI 172 Introduction to Computer Modeling

Prerequisite: M090

Credits: 3

Sec 1 – T, R 8:10 – 9:30

Sec 2 – M, W, F 9 – 10

Rhonda Tabish

rhonda.tabish@umontana.edu

243-7808; Office Location: AD14D

Office Hours: M, W 11 - 12

T, R 9:30 - 10

COURSE DESCRIPTION: Problem solving and data modeling using computer productivity software. Emphasis will be on using spreadsheets and databases for data analysis with formal presentation of results. Credit not allowed for both CSCI 172 and CS172.

COURSE OVERVIEW: This class focuses on using the computer as a modeling tool for analysis of data sets. The software applications we will be using for data modeling are spreadsheets and databases. We'll utilize the Microsoft spreadsheet Excel and the Microsoft database Access to implement data modeling. These are the most common spreadsheet and desktop database applications in use today. The 2013 version of MS Excel and MS Access are needed to complete activities for this course (available on computers in student classrooms and labs).

The course uses a textbook authored by Robert Grauer and published by Pearson Prentice-Hall. It is bundled with the online simulation software package MyLab. This application provides electronic exercises using a simulation of the MS Office productivity suite. It utilizes Microsoft ActiveX technology and requires Internet Explorer and a Microsoft-based Operating System. Apple users - there are solutions available to install a MS Windows "Virtual Machine" inside the Apple operating system. If this is your preferred system for this course, you will need to provide your own technical support. Those students using a non-Microsoft computing platform are welcome to utilize the labs and classrooms available on campus.

MyLab is bundled with the textbook. There are lots of versions of this particular textbook. Be sure to purchase the version with the MyLab bundle. The ISBN listed will accurately identify this bundle.

LEARNER OUTCOMES:

- Create, manipulate, and format data in a spreadsheet.
- Create and use formulas, including conditional formulas.
- Use a spreadsheet to do basic descriptive statistics.
- Design and use charts to present data.
- Work with large tables.
- Design a spreadsheet to implement a computer model.
- Work with database tables and queries.
- Understand how table relationships are used.

REQUIRED MATERIALS: *Custom Edition Exploring Microsoft Office 2013 Plus Edition*; Grauer; Pearson Prentice-Hall; ISBN 978-1-2-6927-4120-; bundled with MyLab; available through the UM Bookstore <http://www.montanabookstore.com>

A computer with the *Microsoft Excel and Access* productivity software package. Internet Explorer is the required browser.

RECOMMENDED MATERIALS: USB Electronic Storage Drive (Jump-drive) to transport and backup files.

ATTENDANCE AND MAKEUP POLICY: Students are expected to attend and participate in class. Because of the amount of material covered in this class, it is important that students consistently attend class. If class is missed it is the student's responsibility to determine what makeup is required. **Late assignments will not be accepted.** Emergency situations will be handled privately on a case by case basis.

All assignments MUST include Student Name, File Name, and Due Date in the footer portion of the document. Emailed assignments accepted in emergency situations only.

ASSESSMENT PROCEDURES:

| | |
|------------|-----|
| Projects | 40% |
| MyLab | 40% |
| Final Exam | 20% |

GRADING SCALE:

| | |
|----------|---|
| 90 - 100 | A |
| 80 - 89 | B |
| 70 - 79 | C |
| 60 - 69 | D |

FINAL EXAM: Sec 1 – Wednesday, December 11, 10:10 – 12:10
Sec 2 – Thursday, December 12, 8-10

Be sure to use UMConnect for email communication.

INCOMPLETE GRADE POLICY:

It is assumed that students have the responsibility for completing the requirements of the courses in which they are enrolled within the time framework of the semester. Incompletes may be given when, in the opinion of the instructor, there is a reasonable probability that students can complete the course without retaking it.

The incomplete is not an option to be exercised at the discretion of students. In all cases it is given at the discretion of the instructor within the following guidelines:

1. A mark of incomplete may be assigned students when:
 1. They have been in attendance and doing passing work up to three weeks before the end of the semester, and
 2. For reasons beyond their control and which are acceptable to the instructor, they have been unable to complete the requirements of the course on time. Negligence and indifference are not acceptable reasons.
2. An incomplete which is not made up within one calendar year automatically will revert to the alternate grade which was assigned by the instructor at the time the incomplete was submitted.
3. An incomplete remains on the permanent record and is accompanied by the final grade, for example, IA, IB, IC, etc.

ACADEMIC INTEGRITY: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The code is available for review online at <http://www.umn.edu/SA/VP/SA/index.cfm/page/1321>.

Using the Web to research materials and concepts is an integral part of learning in the twenty-first century. Studying with other students is a productive method of learning. A certain amount of collaborating on concepts with other students and using resources found on the Internet in an assignment is recommended. Copy and paste is not acceptable. It is expected that each student will input his/her assignment into the computer, and each student must be able to explain any assignment turned in. Collaboration on exams is strictly forbidden.

DISABILITY ACCOMMODATIONS:

Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at <http://www.umn.edu/dss> or call 406.243.2243 (voice/text).

CHANGES TO SYLLABI:

Instructor reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

CSCI 172 Introduction to Computer Modeling

Course Outline

Unit 1 Office Fundamentals, Spreadsheet Basics, Formulas, & Functions (Excel Ch. 1 & 2)

- 1.1 Introduction to the Course
- 1.2 Windows 7 and File Management Review
- 1.3 Introduction to Spreadsheets, Mathematics, and Formulas
- 1.4 Workbook & Worksheet Management, Formatting, Page Setup, and Printing
- 1.5 Formulas and Functions
- 1.6 Logic Functions, Lookup Functions, Financial Functions, and Range Names

Unit 2 Charts, Datasets, Tables, and Conditional Formatting (Excel Ch. 3 & 4)

- 2.1 Introduction to Charting
- 2.2 Chart Design and Chart Layout
- 2.3 Large Datasets and Data Tables
- 2.4 Table Manipulation and Aggregation
- 2.5 Conditional Formatting

Unit 3 Datasets, Tables, and Data Analysis (Excel Ch. 5)

- 3.1 Outlines and Subtotals
- 3.2 PivotTables and PivotTable Options
- 3.3 PivotTable Design and PivotCharts
- 3.4 Analyzing Qualitative Data Sets
- 3.5 Analyzing Quantitative Data

Unit 4 Databases, Filters, Sorts, Queries and Relationships (Access Ch. 1 & 2)

- 4.1 Introduction to Databases
- 4.2 Filters and Sorts
- 4.3 Relationships
- 4.4 Multiple Table Databases
- 4.5 Single Table Queries
- 4.6 Multiple Table Queries

Unit 5 Calculations, Expressions, Forms and Reports (Access Ch. 3 & 4)

- 5.1 Calculations and Functions
- 5.2 Expression Building
- 5.3 Aggregate Functions

- 5.4 Forms
- 5.5 Reports